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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,223	03/05/2002	Roger R. Lesieur	C-2351DIV	1597
7590	04/19/2004		EXAMINER	
William W. Jones Patent Counsel 6 Juniper Lane Madison, CT 06443			DOROSHENK, ALEXA A	
			ART UNIT	PAPER NUMBER
			1764	

DATE MAILED: 04/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/091,223

Applicant(s)

LESIEUR ET AL.

Examiner

Alexa A. Doroshenk

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In view of the appeal brief filed on January 27, 2004, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 3, 4, 8, 12, 13 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Dunster et al. (4,865,820).

With respect to claims 3, 8 and 13, Dunster et al. discloses a method for mixing a fuel/steam or vaporized fuel with an oxidant gas or oxidant/steam gas (col. 1, lines 13-24 and col. 3, lines 35-40) suitable for use in an autothermal fuel gas reformer catalyst bed (col. 3, lines 54-57) taking place in an apparatus comprising:

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a catalyst bed (32) having an inlet end (fig. 5);

a mixing station (30) adjacent to said inlet end of the catalyst bed (fig. 5), said mixing station including an inlet chamber (68), a manifold (72) interposed between said inlet chamber (68) and said catalyst bed (32) inlet end (fig. 5); and

a plurality of cylindrical transfer tubes (80) extending through said manifold (72) from said inlet chamber (68) to said inlet end of said catalyst bed (fig. 5) each of said tubes having a plurality of gas entry passages (86) in sides walls of the tubes, each gas passage having an axis which is perpendicular (see fig. 5) to an axis of the tubes, each passage spaced apart from the catalyst bed inlet end at a distance which is at least two times the diameter of said tubes (see fig. 2).

The method comprising the steps of:

providing a first gas inlet passage (66) opening into the inlet chamber (68);

providing a second gas inlet passage (70) opening into said manifold (72);

introducing a vaporized fuel/steam mixture (col. 3, lines 35-40) into said inlet chamber (68) or manifold (72);

introducing an oxidant gas into the other of said inlet chamber (68) or said manifold (72);

causing one of said fuel/steam mixture or said oxidant stream to flow axially through said transfer tubes toward the inlet of said catalyst bed and causing the other of said fuel/steam mixture or said oxidant stream to flow from said manifold (72) radially into said transfer tubes (80) through said gas entry passages (86) (col. 6, lines 9-13);

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maintaining a pressure differential between the interior of the transfer tubes and the manifold which will result in the radially flowing stream entering said tubes to be entrained and deflected into the axially flowing stream (col. 5, lines 10-16) so as to achieve complete mixing of the gases in the tube (col. 6, lines 1-13).

While Dunster et al. does not define the pressure differential in terms of penetration distance of the radially flowing stream into the transfer tube (as applicant does), Dunster et al. does teach maintaining a pressure differential which is deemed to provide the same result as the instant invention, that being uniform mixing (reads on a homogeneous mixture) (col. 5, lines 10-22 and col. 6, lines 1-13). Therefore the position is taken that the pressure differential of Dunster et al. will inherently provide applicant's same axial stream penetration.

With respect to claim 4, Dunster et al. discloses wherein the pressure differential between the gas stream in said transfer tubes (400 psia) and the gas stream in said manifold (430 psia) is only a few percentage points (col. 7, lines 11-17).

With respect to claims 12 and 17, Dunster et al. discloses wherein said fuel or fuel/steam mixture passes axially through said transfer tubes and said oxidant or oxidant/steam mixture enters said transfer tubes (80) from said manifold (72) (col. 7, lines 6-17).

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

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5. Claims 5-7, 9-11 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dunster et al. (4,865,820) as applied to claims 3, 8 and 13 above, and further in view of Fourie et al. (H1,849), O'Connell et al. (6,223,843 B1) or Lomax et al. (6,368,735 B1).

Dunster et al. discloses the general reforming of hydrocarbons but does not disclose specific hydrocarbons, such as gasoline, diesel fuel and methanol.

Fourie et al. discloses wherein gasoline, diesel fuel and methanol are typical reformable fuels (col. 1, lines 23-29). It would have been obvious to one of ordinary skill in the art at the time the invention was made to select any hydrocarbon recognized for reforming processes in the method of Fourie et al. as it is merely the selection of a specific hydrocarbon known to be effective in a reforming process.

O'Connell et al. also discloses wherein gasoline, diesel fuel and methanol are fuels which are reformable (col. 1, line 65- col. 2, line 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to select any hydrocarbon recognized for reforming processes in the method of O'Connell et al. as it is merely the selection of a specific hydrocarbon known to be effective in a reforming process.

Lomax et al. also discloses wherein gasoline, diesel fuel and methanol are typical fuels which are reformable (col. 1, lines 23-32). It would have been obvious to one of ordinary skill in the art at the time the invention was made to select any hydrocarbon recognized for reforming processes in the method of Lomax et al. as it is merely the selection of a specific hydrocarbon known to be effective in a reforming process.

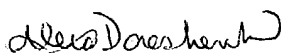
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Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexa A. Doroshenk whose telephone number is 571-272-1446. The examiner can normally be reached on Monday - Thursday from 9:00 AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Alexa Doroshenk
Patent Examiner
Art Unit 1764

April 14, 2004



Glenn Caldarola
Supervisory Patent Examiner
Technology Center 1700